International Council of Scientific Unions

78-9

SPECIAL COMMITTEE
ON
SOLAR-TERRESTRIAL PHYSICS

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IMS NEWSLETTER

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Quiet Sun but Active Field -->> Virtually "in press" we added two pages to this IMS NL to include the two days of magnetic activity recorded by the three N. American IMS chains shown on pg 11. The SSC at 0247 UT on 27 August was not preceeded by any noted solar flare. Sometime between 22 and 23 August a filament near central solar meridian performed a "sudden disappearance". Credit/responsibility for the geomagnetic storm and spectacular aurora are now being tentatively assigned to a "transient coronal hole" that opened up and "blew away" the filament. We'll be interested in satellite recordings of effects of this non-flare-associated event. JHA 78/08/30

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PROGRAM PLANS FOR SEPTEMBER - NOVEMBER 1978

SPECIAL IMS HIGH-ALTITUDE SATELLITE PERIODS - 1978

Special IMS High-Altitude Satellite Intervals for September through November 1978 are given below. Page 4 of NL 78-8 has a detailed listing of all the SSC - selected Special Satellite intervals for July - December 1978 and the satellite configurations that were the basis for selection of these periods. As was done for such earlier intervals, start and end times were extended from the model calculations to allow for boundary fluctuations during disturbances. Details for the first half of 1978 were published in NL 78-2, pg 4.

#14	2 Oct	275/1200 UT	to	3 Oct	276/2400 UT
#15	27 Oct	300/1000 UT	to	28 Oct	301/1700 UT
#16	8 Nov	312/0200 UT	to	9 Nov	313/1200 UT

SPECIAL LOW-ALTITUDE SATELLITE CONJUNCTIONS

The IMS Satellite Situation Center prepares a weekly forecast of times of satellite magnetic field line conjunctions for principal high-altitude IMS satellites, selected low-altitude satellites and selected ground-arrays. This information is telexed by the IMSCIE Office, upon request, to some 20 locations for use by project scientists, satellite tracking controllers and administrators. The service was started for those interested in the position of their experiments relative to the orbit foot-track of GEOS-1 and was expanded with the successful launch of ISEE-1&2. It is expected that many of the original interested persons will wish to continue receiving such information to facilitate special data acquisition in connection with the newly-launched GEOS-2 satellite. We will continue to feature conjunction intervals between the ISEEs and GEOS-2. Those interested in addition of other satellite or ground-based experiments to these forecasts should contact J. Vette, IMS SSC (see NL letterhead for address) and anyone wishing to receive the weekly telexes should contact the SSC or the IMSCIE Office. A conjunction forecast telex was shown in NL 78-4, pg 3.

SATELLITE LAUNCHES:

Sep 14; T. Obayashi; "EXOS-B"; Uchinoura; SATELLITE - see NL 78-6, pg 3
Sep 15; W.R. Bandeen; "NIMBUS-G"; ETR; SATELLITE - see NL 78-8 pg 3

GROUND-BASED, BALLOON AND ROCKET CAMPAIGNS:

----------Phenomena-related Campaigns----------

------ to Sep 30; Ejiri, Kimura, Oya, & Nakamura; "AUSTRAL WINTER CAMPAIGN"; Syowa; ROCKETS(4)- NL 78-3
Sep 9 to Oct 9; G. Haerendel; "PORCUPINE-III&IV"; Kiruna/ESRANGE; ROCKETS (2) - see NL 78-7 pg 3
Sep 15 ---------; J.P. Heppner, "CAMEO"; ETR; ROCKET - see NL 78-8 pg 3
Sep 18 to Oct 3; W. Sharp; "MAP-2"; White Sands; ROCKET - 13.135UE
Oct 1 to Oct 31; E. Nier; 18.1024UA; White Sands; ROCKET - Nike/Tomahawk for EUV dayglow, ion chemistry
Oct 22 to Nov 8; J.C. Ulwick;3 programs; Poker Flat; ROCKETS (6) - see NL 78-8 pg 3
Oct 22 to Nov 11; L.J.C. Woolliscroft; "U.K. Andoya Campaign 1978"; Andoya; ROCKETS (2) - SL1424 & F6
Nov 13 to Dec 10; Ferdinand 40,41; Andoya; ROCKETS (2) - 18.216IE, 18.207IE
Nov 25 ---------; J.R. Winkler; "ECHO V"; Poker Flat; ROCKET - Strypi-Plasma Physics-Aurora

------Quasi-synoptic Observations involving Balloons, Rockets, Aircraft, Selected Surface Campaigns------

Aug 1-2, Sep 6, and Oct 18; Bauer, Evans; IISN; Global Network; SURFACE - See NL 78-2, pg 2 for details
Monthly; Wright & Hilsenrath; "OZONESONDE"; Various Sites; ROCKETS - See Actualities, NL 77-10, pg 3

----------Observing Plans for Temporary Surface Stations----------

------ to Oct 15; Siebert; "GEOMAGNETIC PULSATIONS"; N. Scandinavia; SURFACE - See NL 78-6 pg 11
------ to Nov 30; K. Wilhelm; "GEOMAGNETIC PULSATION CAMPAIGN"; 20 W to 40 E; SURFACE - NL 78-5 pg 3&11
--------- Sep 30; D.L. Carpenter; "Plasmapause Campaign"; Antarctic; SURFACE - see IPPDYP, NL 78-7, pg 2
Aug 15 to Sep 30; Fukunishi; "CONJUGATE POINTS"; Syowa/Iceland; SURFACE - see CCOG Hdbk pg 72

REGIONAL IMS SAT/GBR PROGRAM DETAILS, SEPTEMBER - NOVEMBER

Program details for many brief listings given above appeared, as indicated, in earlier IMS NLs.

SATELLITES

ISEE-C (Heliocentric) --- This satellite was launched successfully on 12 August 1978. The DELTA launch vehicle placed ISEE-C into an orbit so close to nominal that the corrections needed only to spend a small fraction of the on-board hydrazine supply. Consequently the fuel left would "allow 15 years of 'halo orbit' operation." The satellite is now on its way to the L-1 point (Lagrangian point # 1) about 1 hour upstream of the earth in the solar wind. It will assume its station in orbit around this libration point about 25 November. Summary details about this third component of the International Sun-Earth Explorer satellite program, jointly undertaken by NASA and the European Space Agency, were given in IMS NL 78-6, pg 2. References are given there to more complete descriptions.

T. von Rosenvinge, ISEE-C Project Scientist, informs us that the satellite payload was switched on with 100% success and is operating nominally. Data tapes will be produced at NASA GSFC and will be shipped to experimenters with an estimated delay of one month. Data pool tapes will be produced for this satellite as well as for the other ISEEs. Pool tapes and summary data plots will be available from NSSDC/IMS SSC. No estimate is yet on-hand as to when the pool tapes will begin to be available.

EXOS-A "KYOKKO" --- K. Hirao, ISAS, University of Tokyo has sent the IMSCIE office summary plots of EXOS-A satellite data covering some selected periods from 4 Feb (launch date) to 4 Apr. These summary plots will be sent routinely to investigators, IMSCIE and SSC. One of the plots is reproduced on page 5. Some degradation of the plot was inevitable in the reproduction and reduction of the data to fit NL-sized pages. The explanation of the plotted data is as follows:

EUV Airglow - Time variation of extreme ultraviolet glow intensities is shown. Five emission lines of O 1304A, H 1217A (Lyman alpha), O+ 834A, He 584A and He 304A are plotted every one minute.

Ion composition - A quadrupole mass spectrometer on KYOKKO measures positive ion species of ambient plasma. In the figure, four ion species are shown: hydrogen, helium, nitrogen and oxygen. Ordinate is

logarithmic counting rate. This figure does not directly give global distribution of the positive ion composition, because data are not corrected for variation of sensitivity caused by the change in angle of attack of the mass spectrometer. In the case of KYOKKO, the angle of attack changes slowly during one satellite revolution between about 20 and 160 degrees. In general, the mass spectrometer becomes more sensitive to change of attack with an increase of mass number.

Electron temperature and density - Electron temperature is measured by two probes: a planar electrode which is perpendicular to the geomagnetic line of force (T1) and another electrode which is parallel to it (T2). T1 is expressed by a thin solid line and T2 by a dashed line. Electron density is expressed by a thick solid line with arbitrary scale which is proportional to the probe current at fixed bias voltage.

Electrostatic waves ("Faraday Cup" and "Dipole") - The data of ESW plasma experiment are plotted as time frequency spectrograms with a gray shading to indicate intensity, "Faraday Cup 1" and "Faraday Cup 2" show the spectra of the electron currents collected by two Faraday cups, which are deployed symmetrically in the spacecraft equatorial plane with about one metre separation from the spacecraft body. Owing to the field-aligned attitude of the spacecraft, the directivity of one Faraday cup points to the perpendicular direction to the geomagnetic line of force (labelled 1 in the figure), and the other points to the parallel direction (labelled 2). The AC currents are sampled by 11 band-pass filters sequentially to produce data in 11 narrow frequency bands with the center frequencies ranging from 45 KHz to 3 MHz. The time interval between one sequence of the whole measurement is 8 seconds. After collecting the data over 16 seconds, an average is calculated for each frequency band and the intensity is plotted. "DIPOLE" shows the spectrum of the electric field measured by a 4.5 metre tip-to-tip dipole antenna. The frequency coverage and the data processing for the E-field are much the same as those for the AC.

Low energy electron flux; Sensor 1 and 2 - Electron fluxes (3 eV to 9.4 keV) are shown as energy-time spectrograms with gray shading (dot-matrix) to indicate intensity every 16 seconds. Both sensor 1 and 2 measure field-aligned components (upward flux and downward flux) of the flux; in the northern hemisphere sensor 1 measures downward field-aligned flux while sensor 2 measures the upward one. The level, 1 , of the gray shading corresponds to the counting rate as I=4.33xlog(C), where C is counts per 125 milliseconds. 'B.G.' shows level of the background counting rate. Note that data with high B.G. level might be unreliable.

Kp for the period shown was 2. The satellite passed through the northern auroral zone between 1210 and 1240 UT at a height of 3370 km (near apogee), and through the southern auroral zone between 1340 and 1350UT at about 890 km (near perigee).

ROCKETS

KIRUNA/ESRANGE

PORCUPINE-III&IV --- G. Haerendel has sent word of his barium jet experiment on board Porcupine III & IV, to be launched Sep - Oct 1978 (see NL 78-8 pg 3). The barium ion jet will be injected at an altitude above 450 km. It will be directed upward along B-lines with initial speeds between 9.5 and 14 km/sec. The diagram on page 4 displays the ground projection of the theoretical path (with altidude and time after injection marks shown). In addition, there will be an unpredictable transverse drift. As the barium trace stretches (about 3000 km length after 15 min), it becomes rapidly so faint that it can only be observed with very sensitive optical instruments equipped with narrow interference filters. After 30 minutes, the typical brightness is about 50 Rayleighs. The explosion and the lower part of the ion jet are well visible. Some elevation angles for observers in Northern Europe are marked with concentric dotted circles.

POKER FLAT, ALASKA

ECHO V --- J.R.Winkler, University of Minnesota is the project scientist for this experiment to be launched by a Strypi rocket from Poker Flat in November. Objectives are magnetospheric studies using electron beam to measure electric field effects in the equatorial plane, beam plasma effects, and transmission of beam. Auroral detectors include photometer, particle and X-ray.

ROBERVAL, CANADA

D.Venkatesan, University of Calgary,hopes to launch two balloons during August from Roberval in Quebec. This experiment, to measure electron precipitation, is part of an auroral X-ray program. Active geomagnetic conditions are required for launch.

GROUND-BASED

ARCTIC

Norwegian - Alaskan Spitsbergen Expedition - - - The US-IMS Coordinator has sent the following description of a new cooperative effort at observing the daytime aurora.

Ground-based observations of the daytime aurora are best carried out at high latitudes so the winter sun is under the horizon as the station passes under the magnetospheric cleft which is near the poleward edge of the daytime aurora. The island of Spitsbergen is well situated for these observations and forms the poleward terminus of observing stations in the European sector. A cooperative Norwegian - Alaskan observing program will be carried out on Spitsbergen during the next two years as a team from the Geophysical Institute of the University of Alaska joins forces with Norwegian groups from the University of Tromso and the University of Oslo. It is advantageous to observe from more than one station when mapping auroral precipitation regions and the groups will operate stations with all-sky cameras and meridian scanning photometers in Longyearbyen and Ny Aalesund to accomplish this. A short-baseline TV stereo pair will be located near Longyearbyen for the purpose of measuring the instantaneous altitude of various auroral forms. High aperture wavelength scanning spectrometers will be used to study emissions due to excitation by the low-energy precipitating particles unique to the magnetospheric cleft region. The Spitsbergen observations will be part of a circumpolar IMS cooperation because dayside auroral activity will be compared to simultaneous observations in the evening sector by the IMS chain of stations in Alaska and Canada.

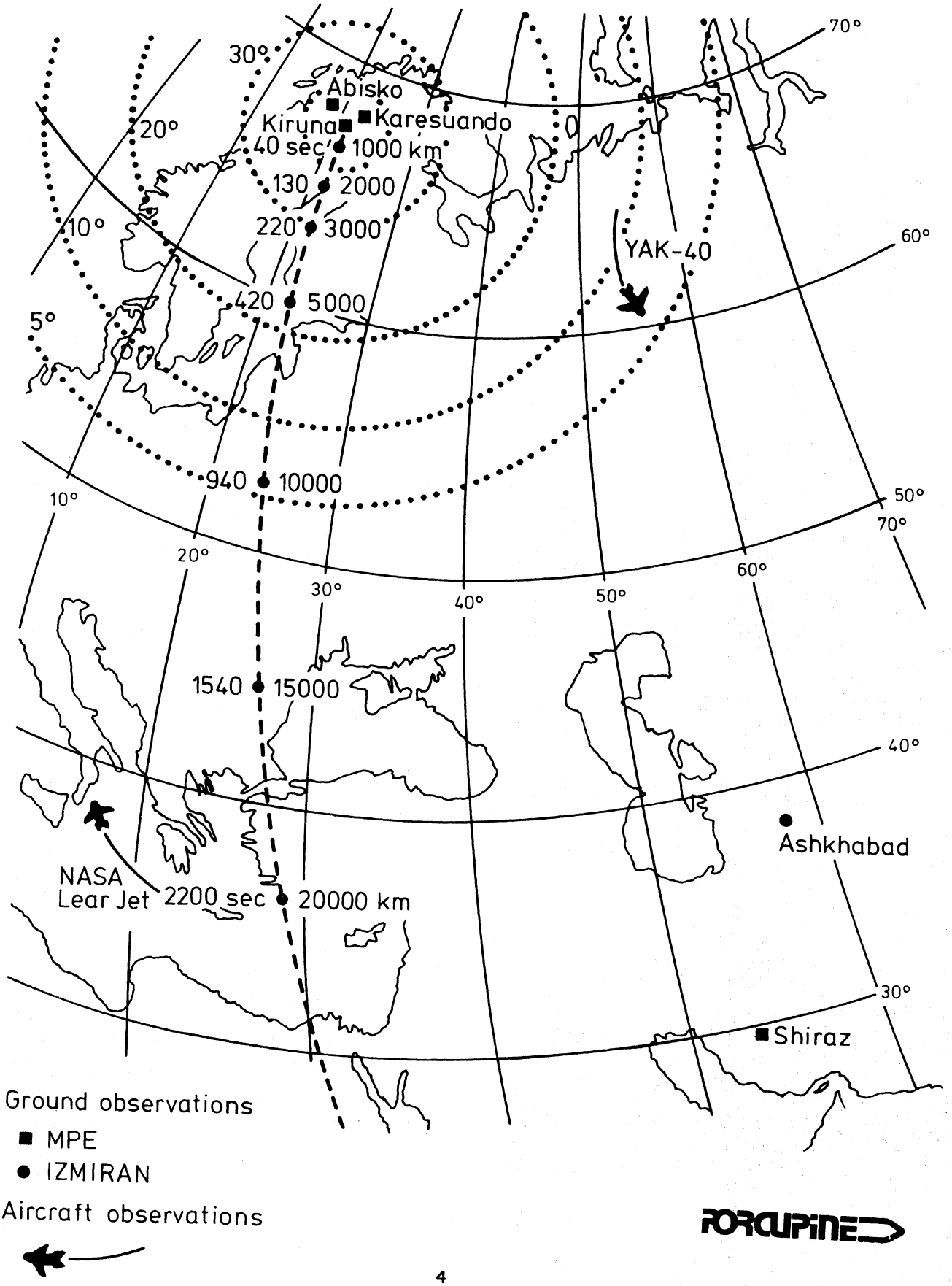
Principal investigators in the program are: C. S. Deehr & G. G. Sivjee, Geophysical Institute, University of Alaska; K. Henriksen, Institute of Physics, University of Tromso; A. Egeland, Norwegian Institute of Cosmic Physics, University of Oslo

The stations and basic instruments are: Longyearbyen - 2 station TV stereo pair, 4 channel meridian scanning photometer, 1 meter Ebert - Fastie spectrometer, 1/2 meter Ebert - Fastie spectrometer, 35mm All-Sky camera; Ny Aalesund - Ebert spectrometer, 4-channel meridian scanning photometer, All-Sky camera.

R. W. Smith of Queen's University Belfast will be measuring F-region winds and temperatures using Fabry-Perot interferometric observations of 6300 A [OI] emission. Observations during the first year ('78-'79) will be carried out during the dark of the moon periods in December and January. The investigators intend to coordinate with satellite observations but will concentrate their observations during the magnetic local time period 06 to 16 hours (03 to 12 hours UT).

WORLD-WIDE MAGNETOMETER NETWORK

29 July 1977 EVENT --- See figs. pgs 8 & 9, this NL and brief text on pg 10.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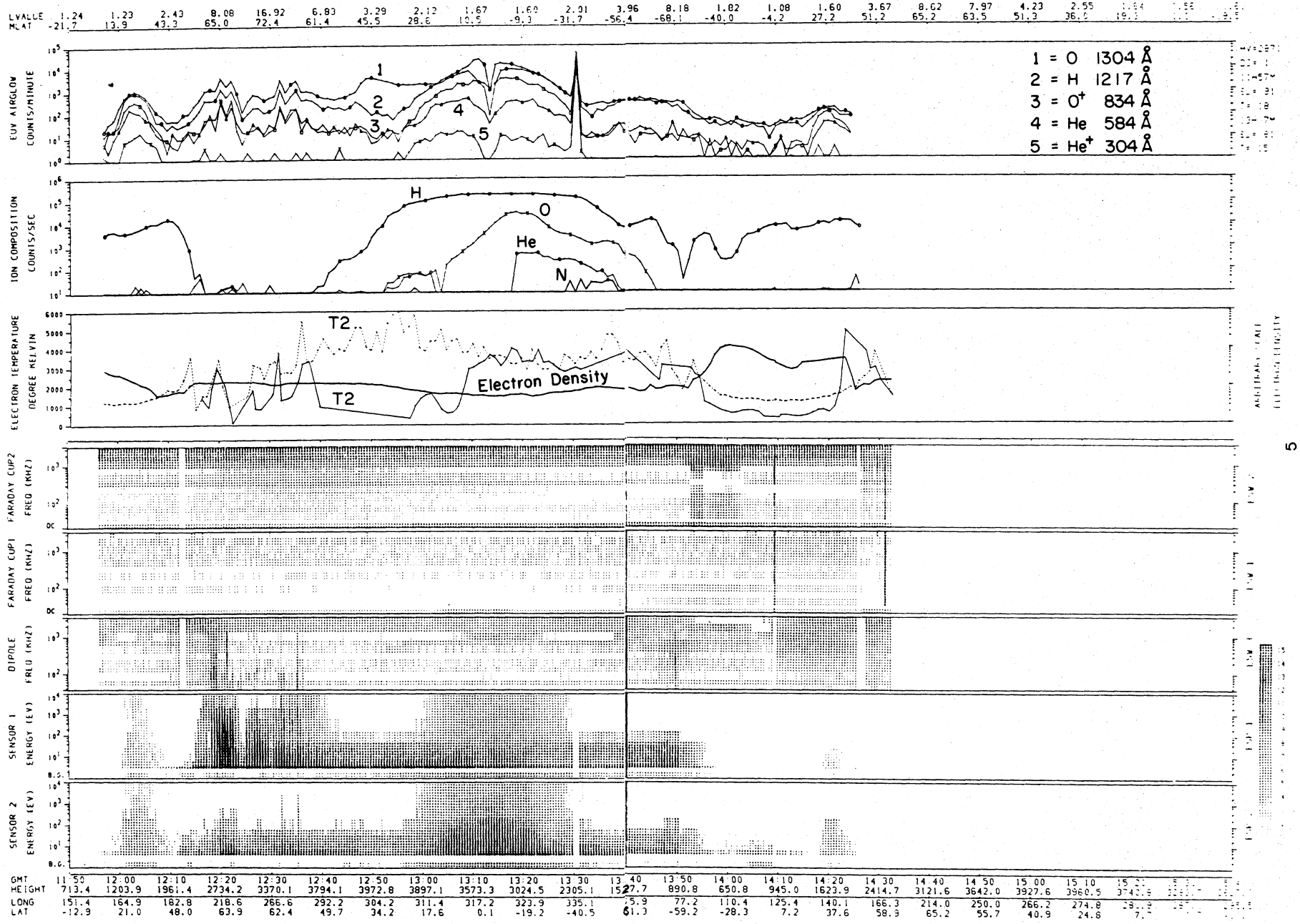
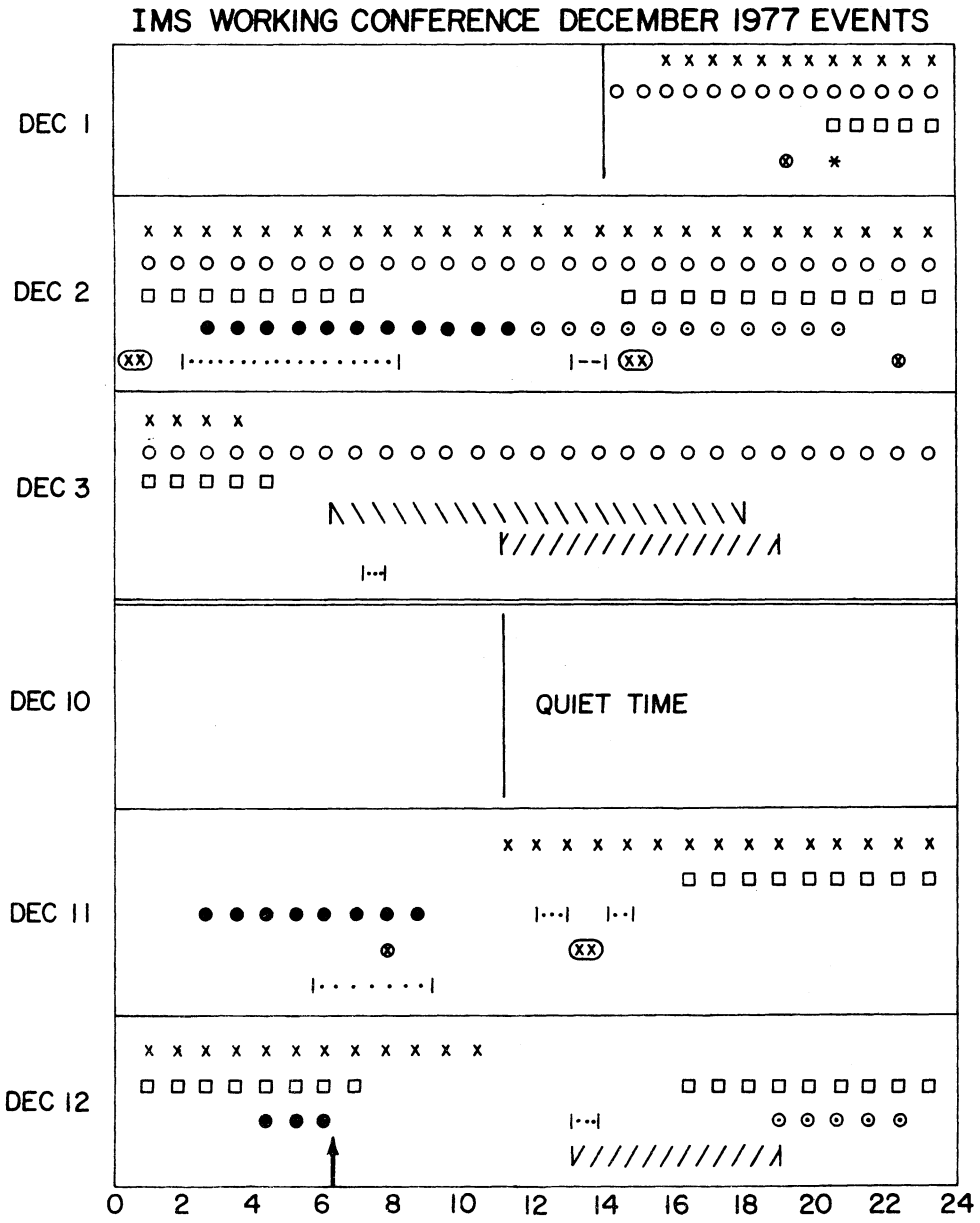
PORCUPINE

KYOKKO (EXOS-A) SUMMARY PLOTS 78-03-15 REV. 00422





CODE	DESCRIPTION OF EVENT OR COVERAGE
xxx	SCANDINAVIAN RIOMETER EVENTS
ooo	ENERGETIC PARTICLES (GEOS)
□□□	SCANDINAVIAN ALL-SKY CAMERA
●●●	ULF (GEOS)
|····|	ELF, VLF (GEOS)
⊙⊙⊙	PC 1 IN USSR SECTOR
\\\\	PC 3.4 IN USSR
////	PC 5 IN NORTH AMERICAN SECTOR
|--|	IPDP IN EUROPEAN SECTOR
*	SSC
⊗	ISEE NOMINAL BOW SHOCK CROSSING
(XX)	ISEE NOMINAL MAGNETOPAUSE CROSSING
↑	SUDDEN DECREASE IN MAGNETOSPHERIC ACTIVITY

Type of activity observed over the intervals selected for detailed study in the IMS Working Conference.

MEETINGS AND WORKSHOPS

IMS WORKING CONFERENCE --- Innsbruck, Austria June 9-10,1978 --- In an effort to provide an efficient format for the presentation of the large data suites which are presently being accumulated during the IMS, the IMS Steering Committee decided two years ago to encourage the use of workshops. In Noordwijk in January 1977, it was decided that the first working conference would be held in conjunction with the COSPAR conference at Innsbruck in June 1978. In Seattle in August 1977, it was decided to select a period in late 1977 during which IMS researchers would endeavour to acquire an optimum data suite. The period December 1-15, 1977 was selected in order to give adequate lead time to experimenters to prepare their expeditions and to give adequate time for data preparation. In addition, it was expected that the initial data suites from ISEE A and B would be available for the December period and could be presented at the working conference. Based on the periods of interest proposed by each prospective participant, the IMS Steering Committee narrowed down the data suites to be treated at a meeting in Moscow in March 1978. The intervals to be dealt with in detail at the working conference were defined as 1600 UT December 1-2400 UT December 3 and 1000 UT December 10-2400 UT December 12. Each participant was informed of the selected data subsets and was advised of the recommended formats for presentation of data in time series format.

The program for the working conference was finalized in the week before the actual event. It became clear early in the development of the program that the large amount of data left very little time for each participant to present his or her data in the available time. It is clear that for the treatment of global relationships, the number of experimenters and the amount of data demands a considerable period of time for handling of even very time-limited data suites.

The actual working conference was attended by over 100 scientists, with approximately 50 individuals having data to contribute to the December 1977 study and the special study of the storm on September 20-21, 1977. The working area featured four slide projectors and three overhead projectors which could simultaneously be in operation. In addition a 16mm movie camera with single framing capabilities was provided by the group from Munster. Microfiche and microfilm reading equipment was made available at the back of the working area and copying facilities were available in the COSPAR Secretariat office. The overall arrangements were excellent and a large amount of credit goes to Dr. E. Mondre who organized the facilities.

In the actual meeting, it was found necessary to reduce the number of projectors at the halfway point of the first day in an effort to increase the size of the projected images on the screens. At the same time the work tables were moved as close to the front of the room as possible so that it would be easier to see the slides and viewgraphs. This meeting demonstrated how important it is to have clear legible figures; this constraint has considerable impact on the working area layout.

In the following section, the character of the magnetospheric, ionospheric and interplanetary parameters will be outlined for the periods of interest treated in the working conference. It is based on notes taken by G. Rostroker during the course of the workshop and on written summaries provided by the individual contributors after the workshop. A bar chart showing the general character of activity over the selected days is shown in the figure on page 6.

Service data available for the interval December 1-15, 1977. At the start of the workshop the attendees were informed of working aids which would be available during and after the meeting. The following items were noted:

(1) J. V. Lincoln informed the workshop that data packs for the interval December 1-15, 1977 were presently being prepared at WDC-A in Boulder, Colorado. These will be available at a cost of $50 per package in the near future.

(2) J. H. Allen provided copies of common scale magnetograms of selected low-latitude, auroral zone and polar cap stations for the special intervals along with preliminary AE(5) indices.

(3) Dr. A. Nishida brought booklets summarizing Japanese IMS observations over the periods selected for study. These 69 page booklets were of great use in providing information about low latitude responses to high latitude activity; copies were available to all attendees at the meeting.

(4) Drs. J. Vette and M. Teague from the SSC Office at NASA were present and were able to provide immediately upon request information about the status and ephemeris of all relevant satellites.

Discussion of the Working Conference and Recommendations. The morning of June 10 was spent summarizing the information for the selected periods from December 1-15, 1977 and agreeing on the subset of those periods for further detailed study. After some considerable discussion, the following two intervals were selected:-

Primary Interval: 1800 UT Dec 1 - 2400 UT Dec 2
Secondary Interval: 0000 UT Dec 11 - 0900 UT Dec 12

It was suggested that time be set aside during the IMS Meeting at Melbourne, Dec 1979, to further look at these intervals (or at least the primary one) with an aim to injecting more physics into the situation. J. Vette strongly urged the adoption of a workshop which could use computer facilities allowing simultaneous presentation of various data suites using common scales. He hoped that he would be able to aid in the organization of such a workshop to be held in the SSC at NASA/Goddard sometime in late 1978 or early 1979. The attendees would have to supply their data in computer-compatible form to the SSC two to three months in advance of such a workshop.

Drs. Nishida and Obayashi announced that an international IMS workshop is to be held in Tokyo over March 13-15, 1979. They hoped that many IMS researchers would be able to attend this meeting where early results of IMS studies would be treated.

There was considerable discussion about the successes and failures of the workshop format utilized at Innsbruck. The success lay in the opportunity of the participants to see global responses using various types of instrumentation to events which they recorded using their own equipment. The presentation of the data sets occurred in a sufficiently short time so that they were able to relate the various data sets to one another. The use of several projectors to show several data suites simultaneously was considered very successful.

There were several recommendations as to how such workshops could be improved. In order of strength, these recommendations are:

i) All slides and viewgraphs should have clearly visible legends and should conform to a prearranged set of scales in the case of presentation of time series data. Times of exciting events should be clearly indicated.

ii) Less data should be handled in the time available. Given the amount and complexity of the data, it was not possible to do justice to the contribution of each participant in the given time frames.

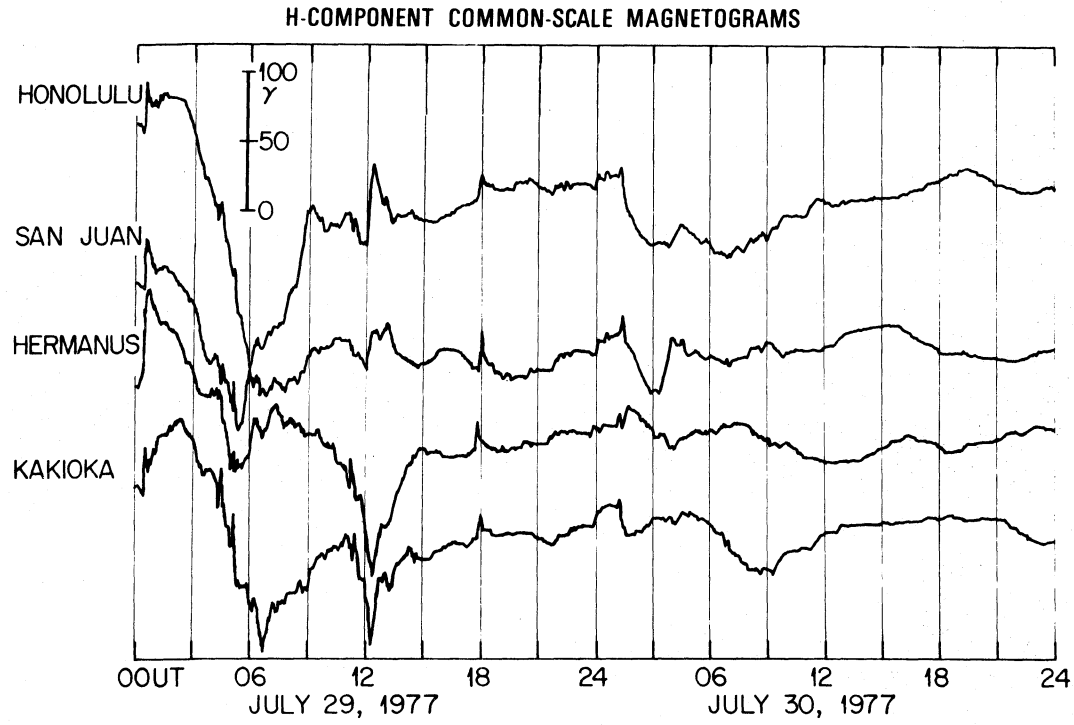
iii) More time should be made available for the participants to interact with one another on the conference floor. It was suggested that for every hour of data presentation, 10 minutes should be devoted to such unstructured interaction.

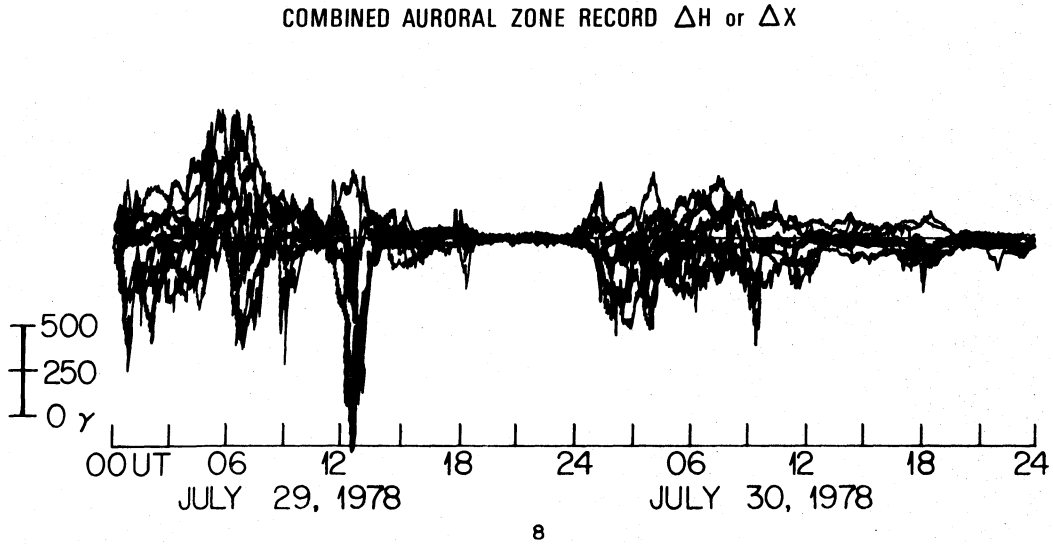
iv) Several people recommended that one person be given the responsibility of keeping track of each contribution and trying to relate each contribution to the ones before it in "real time". Such an individual would help facilitate discussion by pointing out interesting facets of the combined data suite, and might act as a "play-by-play" commentator who would be free to describe what he or she thought was going on at the conclusion of each session and perhaps, to some extent, at some regular intevals during each session. This will be a hard role to fill given many different data sets.

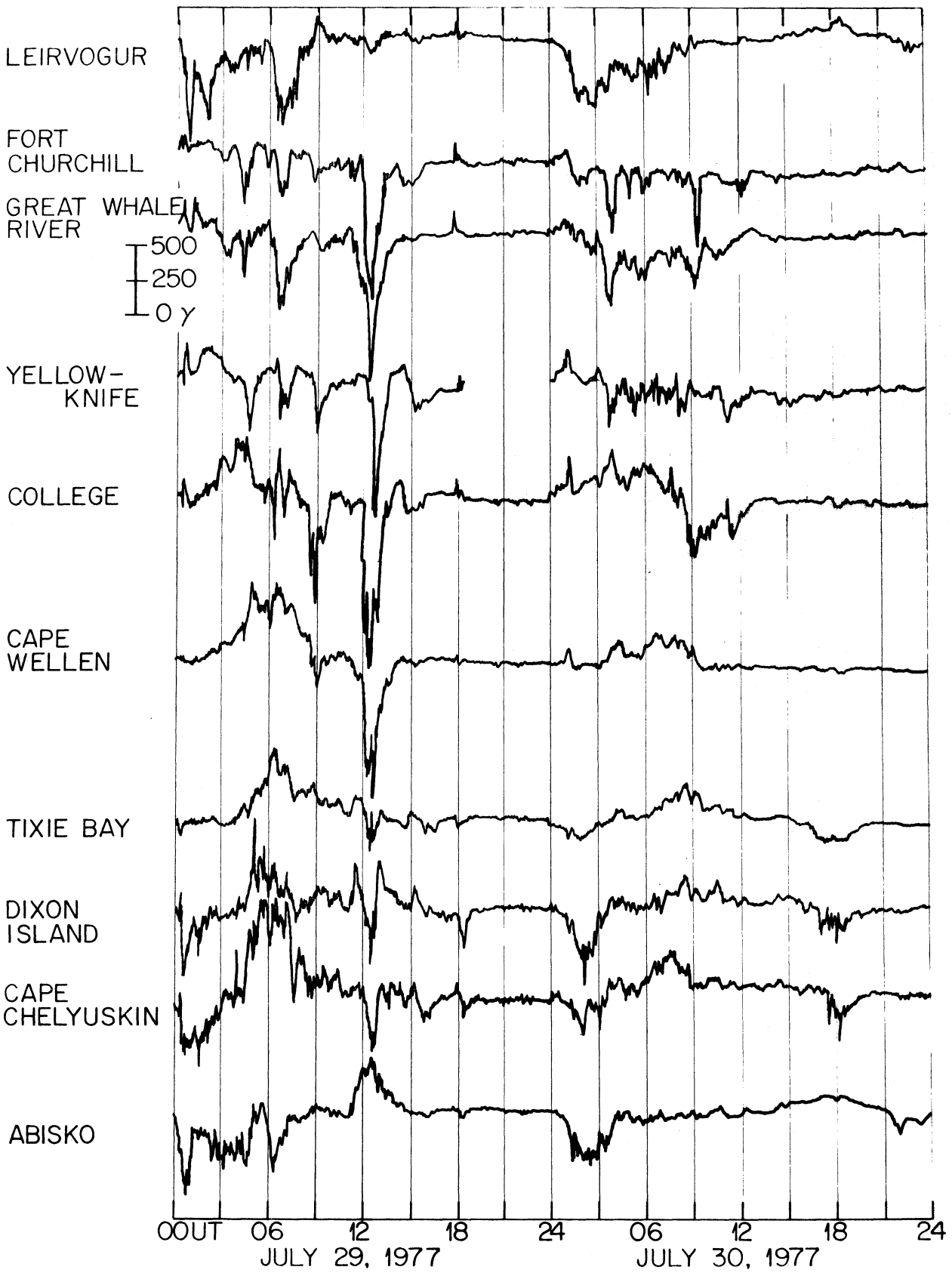
v) The overall summary of the data treated at each workshop might be prefaced by sessions in which the participants broke up into small groups, each group dealing in some detail with specific problems. This would allow the data to presented more concisely on the floor of the main workshop in which all groups would participate.

vi) A minimum of one theoretician should be available at each workshop. His job would be to combine with the "play-by-play" commentator to stimulate the participants by suggesting the dominant physics in action for each situation.

The IMS Working Conference in Innsbruck was an initial attempt to provide a more satisfacory format in which IMS researchers could present their data and ideas than the present standard conference format provides. The Innsbruck conference represents one type of workshop - a "show and tell" session where data suites are scrutinized for the first time. More detailed studies will undoubtedly call for different logistics and a different atmosphere; the use of computer facilities to aid in presentation of data is anticipated as a future development. The IMS Steering Committee hopes that the participants found the Innsbruck meeting a stimulating and worthwhile experience.



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ACTUALITIES

KIRUNA - ESRANGE

D - Layer Campaign - (see NL 78-5 pg 11 and NL 78-6 pg 4). P.Simon reports the successful completion of this campaign. The first series of launchings (4 rockets) was on July 30 and the second series (3 rockets) was launched on August 13. Both series were fired into faint noctilucent cloud, and he reports that as a whole, valuable scientific data was obtained during these launchings.

LAS VEGAS, NEVADA

Kinesonde instrument in Nevada. The NOAA 'Kinesonde' (e.g. Wright, Glass and Spizzichino, J. Atmos. Terr. Phys.38, 713-729, 1976) measures ionospheric drifts, lateral and vertical structure. It is now installed near Las Vegas, Nevada, and is committed for use on very intermittent occasions. The facility (and data analysis software) can be made available to interested workers by contacting J. W. Wright at NOAA-SEL, Boulder.

INTERNATIONAL PROGRAMS --- More News from Innsbruck

Among the many meetings in and near Innsbruck, Austria this last summer were several dealing with two emerging international scientific programs: Solar Maximum Year (SMY) and Middle Atmosphere Program (MAP). This note is highly preliminary because several formal actions must take place relative to international recognition of these programs by unions most concerned and, if they are both to be formally within the SCOSTEP structure, appropriate action is necessary from ICSU relative to the extension of SCOSTEP's lifetime. Still, planning for these two programs was evidently sufficiently far along to make their sharing here with IMS participants worthwhile. Also, it is expected that substantially more information about SMY and MAP will soon be available.

SMY --- While there are still union and committee organizational steps to be completed before the Solar Maximum Year is properly an "official" international program, much of its framework has been established. The SMY will take place over 19 months from August 1979 through February 1981, a long year. Already in existence under SCOSTEP were organizations for the Study of Travelling Interplanetary Phenomena (STIP) and for the Flare Buildup Study (FBS). Murray Dryer, NOAA, is chairman of STIP and details about STIP Special Observational Intervals have appeared in these IMS Newsletters. Zdenek Svestka, AI Utrecht, is chairman of the FBS. A new SCOSTEP solar program was established at Innsbruck, called Study of Energetics Released in Flares (SERF) under David Rust, AS&E. Each of these area chairmen will work with C. de Jaeger and others to be appointed by the respective bodies which engage to sponsor or participate in SMY. Formal organizational details will be announced when these are known.

Regional meetings to plan national and multi-national participation in particular aspects of SMY have already been held and will continue through 1978 and early 1979. SMY will properly commence with special interval STIP VII and the solar/satellite "Close Encounters" described in IMS NL 78-7. At Innsbruck the USSR SMY program and endorsement was presented by G. Kuklin. It is expected that other national plans will emerge from the series of meetings ahead.

MAP --- The science of MAP is described in "Middle Atmosphere Program Planning Document", a report prepared at the MAP Planning Conference, 21-24 June 1976, Urbana, Illinois, USA. Copies are available on request from the Aeronomy Laboratory, Dept of Electrical Engineering, Univ of Illinois, Urbana, IL 61801, USA. First meeting of the Interim MAP Steering Committee was held at Innsbruck, preceeding the XXIst COSPAR. Prof. S.A. Bowhill, Chm, and 11 committee members met with several invited guests to work out details of program plans for presentation to SCOSTEP National Representatives and Bureau. MAP national planning reports were presented for Japan and the United States and information about Indian programs was shared with the group. From work of the Steering Committee emerged four Pre-MAP (or preparatory MAP) Projects listed here: (1) PMP-1 A Coordinated Study of the Behaviour of the Middle Atmosphere in Winter, K. Labitzke; (2) PMP-2 Equatorial Wave Dynamics, I. Hirota; (3) PMP-3 Study of Processes in the Upper Stratosphere and Mesosphere by Photochemical, Complementary Spacecraft, and In Situ and Ground Measurements, J. Gille; and (4) PMP-4 Presentation of Meteorological and Chemical Variables in the Format of Monthly Mean Zonal Cross Sections, P. Simon. Names attached with each PMP are those of nominal sponsors; however, actual chairmen and program memberships are still subject to change. Summary descriptions of the PMPs were distributed at an Open MAP Discussion Meeting and interest was especially great in #'s 1 & 3 because they begin, respectively, with the winter 1978-79 and with the Sept launch of NIMBUS-G.

Perhaps the most important action of the MAP Steering Committee was its recommendation 78-5, "The MAP Steering Committee recommends that the Middle Atmosphere Program take place in the interval 1982-1985. Preparatory studies will commence in 1979 with four projects adopted by the Steering Committee on the basis of available or expected resources." The main phase or actual MAP program will then cover the years 1982-1985. It is already anticipated that several years of analysis will follow the years of **emphasis** on data taking.

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While it is not yet completely clear what role WDC-A for STP will play relative to these two international scientific programs, SMY and MAP, there was an expression of interest about the possibility of having a newsletter a la IMS NL and possibly other IMSCIE-like and SSC-like services. We await resolution of these possibilities with somewhat mingled emotions.

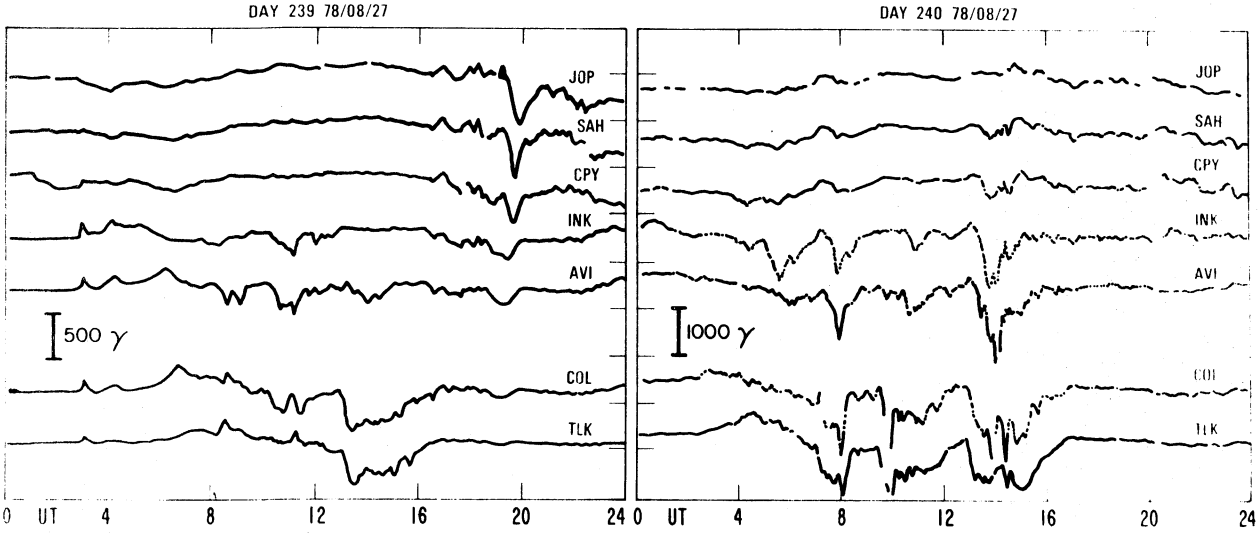
IMS SPECIAL EVENT

29 July 1977 SUBSTORMS --- Common-scale ground magnetograms from selected observatories are shown on pages 8 & 9 of this NL. They were kindly provided by Dr. S.-I. Akasofu, Geophysical Inst. Univ. of Alaska, and show the stacked plots of magnetograms for the 29 July 1977 substorms, which were topics of IMS workshops in Miami (April) and Innsbruck (June) organized by R.H. Manka.

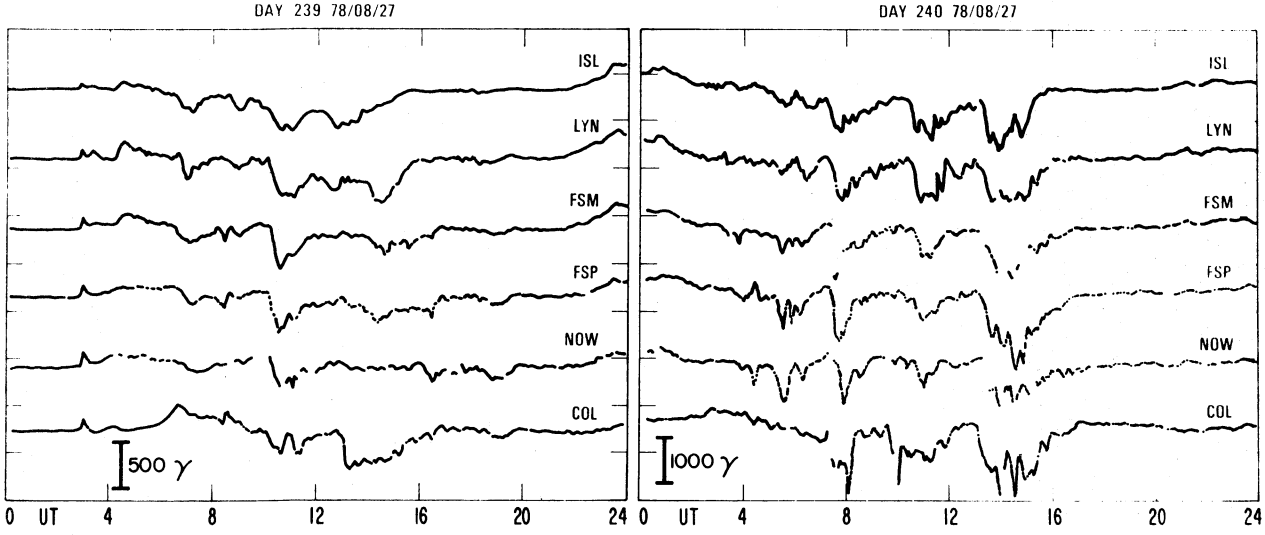
These magnetograms, based upon observatory data from WDC-A for STP, were quickly digitized by Dr. Akasofu in time for the Innsbruck workshop. Several key features of the event can be seen in the figures. A large interplanetary shock wave arrived at the magnetopause at about 0027 UT on 29 July with a resulting magnetopause compression into the GEOS position at about 7 Re! This solar wind pressure relaxed, but then at least 4 distinct substorms were recorded with maximum field depressions at 0430, 0630, 0900 and 1230 UT. As can be seen from auroral zone latitude magnetograms, the W. electrojet of the 1230 substorm extended from local dawn through midnight to local dusk and there is evidence for its extension through the afternoon sector.

There will be a continuing data analysis effort for this event. As mentioned last month (NL 78-8, pg 7), additional steps will include collection of data abstracts from each participating scientist. Anyone having data to report should send a brief abstract (1 paragraph), along with a summary data figure, where possible to R.H. Manka, US IMS Coordination Office, NSF, Washington, D.C. 20550, USA. In addition, contributions to the analysis will be made in a special discussion from the modelling standpoint during the La Jolla Conference on Quantitative Modelling of Magnetospheric Processes in September. After further interaction between scientists having related data, a wrapup workshop will take place in 6-9 months, possibly just before the Spring AGU in Washington, D.C. Further reports on analysis of this event will appear in these NL's.

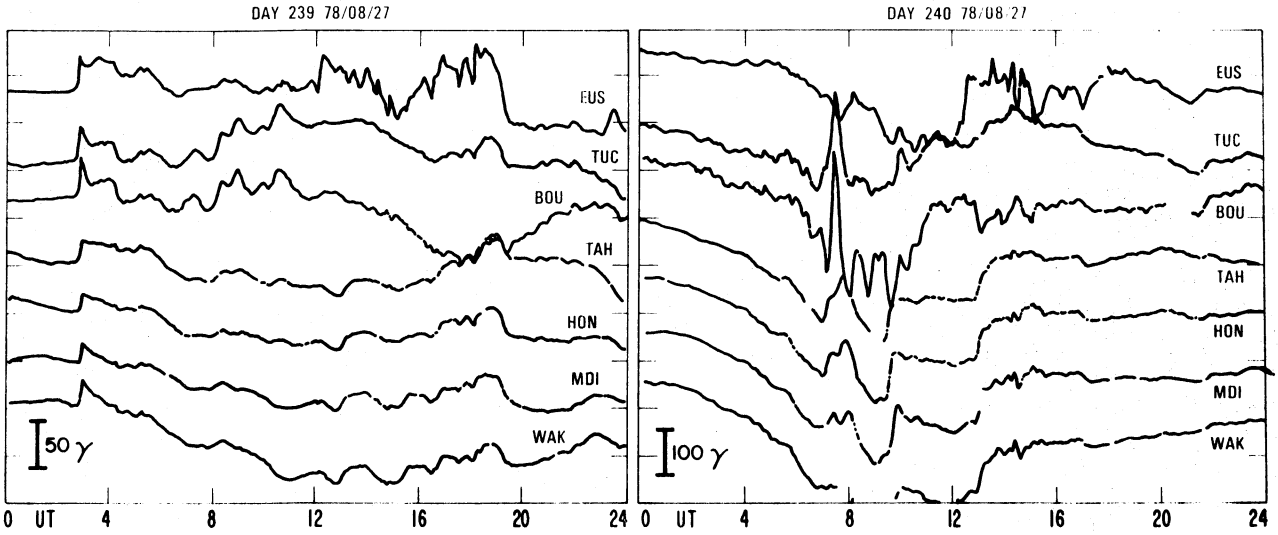
ALASKA CHAIN H-TRACE



EAST-WEST CHAIN X-TRACE

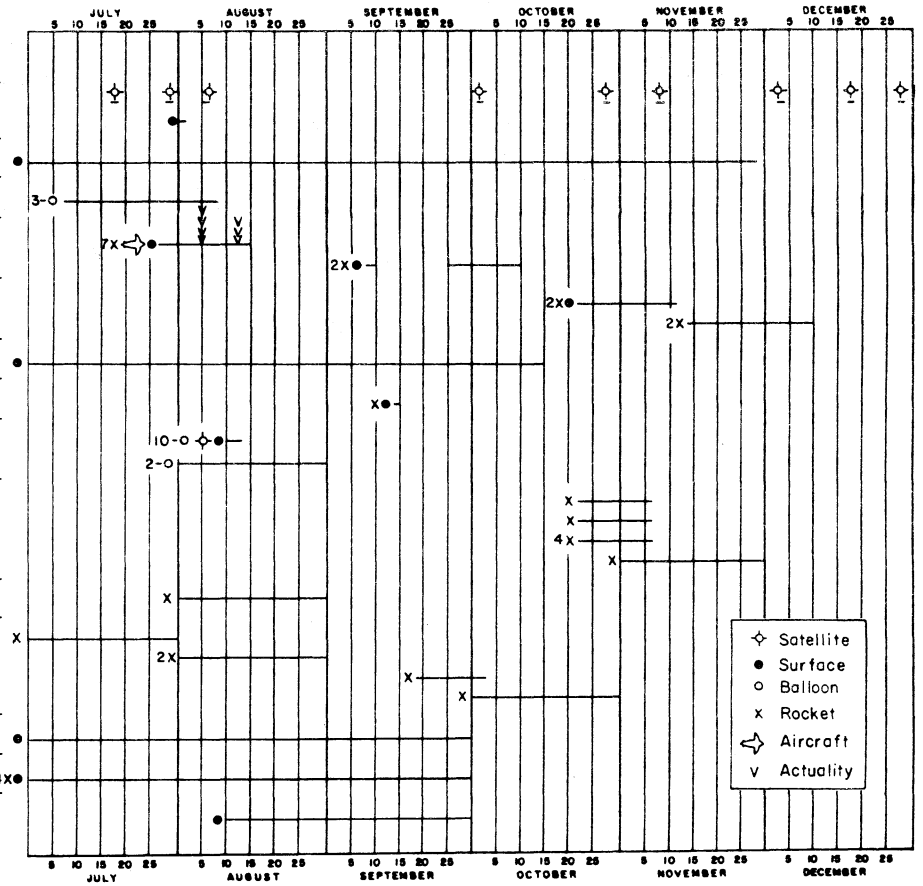


MIDLATITUDE CHAIN H-TRACE

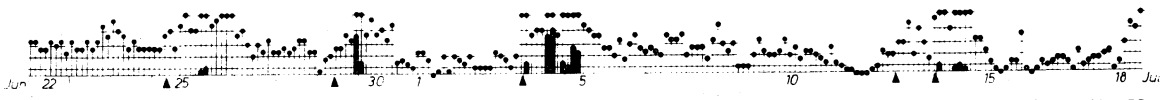


IMS CALENDAR OF GBR CAMPAIGNS JULY - DECEMBER 78
(As of 28 AUGUST 1978)

WORLD-WIDE- -
Special SSC-selected satellite periods
IISN (Bauer, et al)
20 W TO 40 E- -
Wilhelm; "Geomagnetic Pulsation Campaign"
NY-ALESUND- -
Iversen; "POLAR 78"
KIRUNA (ESRANGE)- -
Bjorn; "D-Layer"
Haerendel; "Porcupine"
ANDOYA (ANDENES)- -
Woolliscroft; "UK Andoya Campaign"
Ferdinand 40,41
N. SCANDINAVIA- -
Siebert; "Geomagnetic Pulsations"
ALASKA-N. SCANDINAVIA -
Heppner; "Cameo"
CANADA- -
Holzworth; "Electric Field Campaign - Summer 1978"
Venkatesan; Balloons
POKER FLAT- -
Ulwick; "EXCEDE II Spectral"
Ulwick; "FWIF"
Ulwick; "TMA, SWIR, IR"
Winkler; "ECHO V"
WALLOPS ISLAND- -
Smith; "14.542UE"
WHITE SANDS -
Thomas; "31.XXXUE"
Sheldon; "23.009UE & 23.010UE"
Sharp; "13.135UE MAP-2"
Nier; "18.1024UA"
ANTARCTICA- -
IPPDYP (Helliwell, et al)
SYOWA -
"Syowa aus. Winter Rocket Program"
CONJUGATE POINTS- -
Syowa - Iceland (Fukunishi)



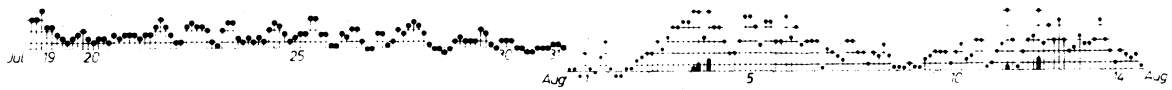
SOLAR AND GEOMAGNETIC ACTIVITY JUNE 22 - AUGUST 14



ROTATION #1981

2800 MHZ FLUX OTTAWA	169	184	183	190	189	178	193*	174	168	162	151	138	123	113	114	115	117	125	132	146	153	162	175	160	154	164	158
SS NO. BOULDER	139	215	255	130	208	249	227	199	201	107	121	154	101	87	49	97	104	131	161	173	154	205	149	135	191	153	113

*Flare enhancement



ROTATION #1982

2800 MHZ FLUX OTTAWA	144	141	136	123	120	115	110	109	107	107	106	106	106	103	103	106	109	114	119	125	127	128	122	119	121	132	130
SS NO. BOULDER	131	73	70	64	76	41	50	12	51	50	46	57	47	45	58	57	88	100	174	122	111	76	98	71	107	142	130